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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,984	09/05/2003	Charles Dunn	011920-1430	6990
24504	7590	02/07/2005	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			WELCH, GARY L	
			ART UNIT	PAPER NUMBER
			3765	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/656,984

Applicant(s)

DUNN, CHARLES

Examiner

Gary L. Welch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiple insulation layers as required in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 15 and 24 require an insulation layer having a three dimensional pattern that defines a plurality of closed-cell air pockets configured to trap air to insulate the wearer. It appears that the insulation layer having the three dimensional pattern in combination with another layer forms the closed-cell air pockets and not solely the insulation layer.

Claims 2-24, 16-23 and 25-32 depend from rejected claims 1, 15 and 24 respectively and therefore are rejected accordingly under 35 U.S.C. 112, second paragraph.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13, 15-22 and 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aldridge (U.S. 5,860,163) in view of Paire (U.S. 5,098,770).

Aldridge discloses a thermal liner 54 for use in a protective garment 10. The thermal liner 54 comprises an insulation layer 58 fabricated from lightweight aramid material such as NOMEX or KEVLAR and is "preferably woven" (i.e., not

non-woven/batt). Additionally, the thermal liner 54 has a plurality of insulating beads 60 adhesively bonded or self-adhered to the insulation layer 58 thereby forming a plurality of closed-cells having a three dimensional pattern. The combination of the thermal liner 54, comprised of the insulation layer 58 and insulating beads 60, with the moisture barrier layer 56 creates a plurality of closed-cell air pockets 62' that traps air thereby insulating the wearer.

At column 6, lines 23-29, Aldridge states that the insulation layer 58 is "preferably woven". This language infers that the layer 58 can also be non-woven (i.e., batt). However, to expedite the prosecution of the case, a secondary reference will be used below to modify the insulation 58 of Aldridge with a known non-woven insulation layer. This modification is for clarity purpose and the examiner does not regard the insulation layer 58 of Aldridge as only being woven.

Paire teaches a firefighter's garment having a non-woven (i.e., batt) insulation layer 1 fabricated from entangled flame-resistant fibers. Functionally, layer 1 of Paire is equivalent to layer 58 of Aldridge and it would have been well within one of ordinary skill in the art to substitute the woven insulation layer 58 with a non-woven insulation layer 1 as taught by Paire. The insulating beads 60 of Aldridge can be adhesively bonded or self adhered to the non-woven insulation layer.

With regard to claims 2, 16 and 25, the batt comprises at least one of aramid, melamine, FR rayon, modacrylic and carbon fibers.

With regard to claim 3, closed-cell air pockets are formed on the inner side of the insulation layer adapted to face the wearer (see Figure 11).

With regard to claim 4, the closed-cell air pockets are separated from one another and therefore are defined by boundary walls.

With regard to claims 5 and 26, the closed-cell air pockets comprise repeated geometric shapes.

With regard to claims 6, 17 and 27, the geometric shapes are circles but may also be triangles or other geometric shapes (Col. 5, lines 12-28 of Aldridge).

With regard to claims 7, 18 and 28, Aldridge discloses that the closed-cell air pockets have a transverse dimension of 3 mm and a depth of 1 mm. A review of the applicant's specification does not reveal any criticality for his claimed dimensions (i.e., why the claim dimensions are superior to any other dimensions). Therefore, one of ordinary skill through routine experimentation would have found it obvious to chose the claimed dimensions in order to provide a predetermined level of protection to the wearer while minimizing the weight of the garment.

With regard to claims 8, 19 and 29, the insulation layer has a weight in the range of 0.75 ounces per square yard to about 8 ounces per square yard (Col. 6, lines 30-33 of Aldridge).

With regard to claims 9, 20 and 30, Aldridge discloses that the weight of the layer is about 4 to 6 ounces per square yard. This range is outside of the claimed range. A review of the applicant's specification does not reveal any criticality for

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his claimed dimensions. Therefore, one of ordinary skill in the art would have found it obvious to chose the claimed dimensions in order to reduce the garments weight while maintaining a predetermined level of protection.

With regard to claims 10 and 21, multiple insulation layers are provided and shown in Figure 15.

With regard to claims 11 and 31, the facecloth layer (56/72) is attached to the insulation layer and is comprised of a plurality of flame resistant fibers.

With regard to claims 12 and 32, the facecloth layer (56/72) is attached to the inner side of the insulation layer 58 wherein the closed-cell air pockets of the insulation layer face the facecloth layer.

With regard to claims 13 and 22, the facecloth layer comprises at least one of aramid, melamine, FR rayon, modacrylic and carbon fibers (Col. 6, lines 63-65 of Aldridge).

With regard to claims 15 and 24, the invention is disclosed in one or more of the above rejected claims.

5. Claims 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aldridge (U.S. 5,860,163) in view of Paire (U.S. 5,098,770) as applied to claims 11 and 23 above, and further in view of Kelleher et al. (U.S. 2002/0069453).

Aldridge and Paire disclose the invention substantially as claimed above.

However, they do not disclose that the facecloth layer comprises a hydrophilic finish.

Kelleher et al. teaches a firefighter's garment thermal lining having a facecloth layer 37 attached to an insulation layer 36 wherein the facecloth layer is treated with a hydrophilic finish for drawing perspiration off of the wearer's body (paragraph 22) thereby keeping the wearer comfortable.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the facecloth layer of Aldridge with a hydrophilic finish as taught by Kelleher et al. so as to keep the wearer comfortable by drawing perspiration off of the wearer's body.

### ***Conclusion***

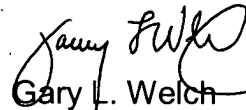
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aldridge '905 discloses a firefighter's garment having a closed-cell foam thermal layer. Grilliot et al. '886 and Statham et al. '476 discloses a firefighter's garment having channeling members attached to the thermal layer thereby providing additional insulating effects while reducing the garments overall weight. Hayes '384 and Paire '769 discloses various types of firefighter's garment liners.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Welch whose telephone number is (571) 272-4996. The examiner can normally be reached on Mon-Fri 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John J. Calvert can be reached on (571) 272-4983. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gary L. Welch  
Primary Examiner  
Art Unit 3765

glw